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AUTHOR Greenan, James P.
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ABSTRACT

The study was designed to identify problems, needs, effectiveness, and interests in enhancing personnel development networking activities for professionals working with handicapped students in transition from school to work. A needs survey was developed based on a research review and comments by a panel of experts. The instrument asked respondents to rate 10 problem areas in vocational education, special education and rehabilitation and to list and rate effectiveness of networks or resources which they have used. Respondents (N=416) were identified by state consultants. Results suggested that several problems were of particular importance to vocational teachers: needs assessment, least restrictive environment/mainstreaming and program evaluation. Minority group Ss also cited least restrictive environmental mainstreaming as a signficant problem area. Psychologists, counselors, researchers, vocational evaluators, and parents/advocates cited problems in interagency/organizational collaboration and school to work transition services. Vocational teachers, teacher educators, and persons with doctorates pointed to concerns for preservice and inservice programing and/or certification problems and issues. Findings further suggested the existence of several effective networking strategies and resources including newsletters, computer linkages, and conferences. Six recommendations are offered for practice, three for research, and two for policy. (CL)

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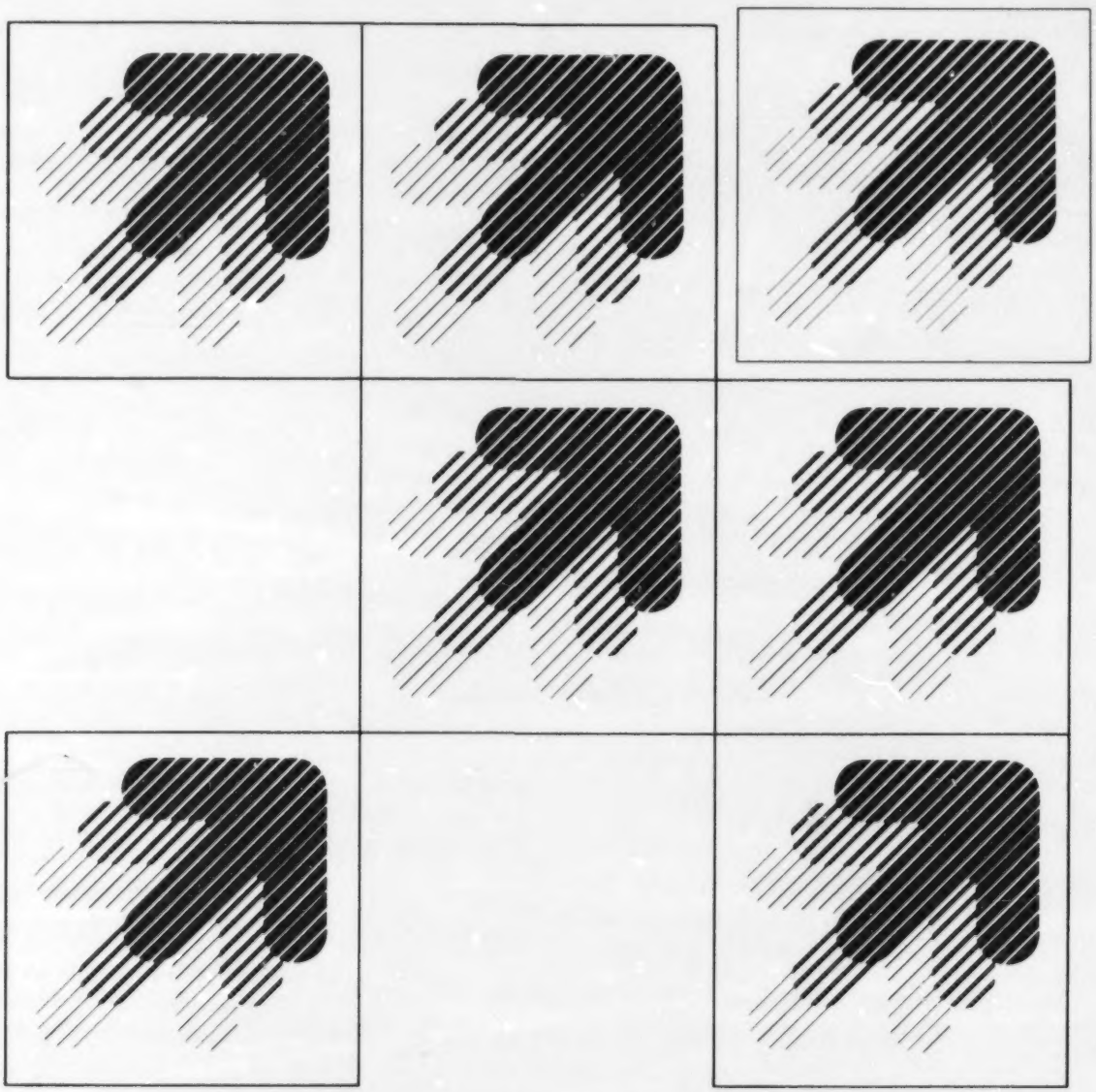
NETWORKING NEEDS IN VOCATIONAL SPECIAL EDUCATION



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NETWORKING NEEDS IN VOCATIONAL SPECIAL EDUCATION

James P. Greenan
Research and Development Coordinator

A Publication of the

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OFFICE OF CAREER DEVELOPMENT FOR SPECIAL POPULATIONS

College of Education
University of Illinois
at Urbana-Champaign
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Champaign, Illinois 61820

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Networking Needs in Vocational Special Education

Introduction

Preparing personnel to work with special needs learners continues to be an important activity in vocational education. There are, however, several problems and issues which impede the delivery of essential instruction and support services to students (Greenan & Phelps, 1982; Howard, 1979). For example, personnel preparation, program alternatives, and funding have been identified as critical problem areas. In addition, interagency collaboration has been targeted as an area needing improvement. Professionals in vocational education, special education, and rehabilitation need to work more closely and coordinate their goals and activities to effectively serve special needs learners.

One approach to enhancing interagency collaboration is through networking among agencies that serve special needs learners in vocational programs (Cohen & Lorentz, 1977; Hirschorn, 1978). Naisbitt (1982) stated that "a network(s) is . . . (are) people talking to each other, sharing ideas, information, and resources" (p. 192). This defininition/approach is particularly appropriate for personnel development professionals (e.g. university professors, local directors, staff development leaders, and others.) Specifically, "resource exchange networks . . . can be embedded in different types of networks, and . . . make it possible that interrelationships can be formed between . . . people in the network" (Sarason & Lorentz, 1979, p. 168).

The development and implementation of effective networks and networking activities can provide personnel development professionals with resources such

as publications, bibliographies/references, practica sites, guest lecturers/resource persons, instructional materials, program/course syllabi and materials, program products/materials/resources, grant program information, and other useful resources. There appears to be, however, a scarcity of research which has examined the problems associated with networking, identified viable networks, assessed the effectiveness of networking strategies, or determined the interest in networks of personnel who work with special needs learners. This information, if provided, could assist professionals in personnel development planning, implementation, and evaluation activities.

Purpose of Study

The central problem of this study was to develop and validate an instrument, and assess the networking needs of personnel development professionals in vocational education, special education, rehabilitation, and other related agencies. The specific purpose of this study was to identify the problems, needs, effectiveness, and interests related to enhancing personnel development networking activities for professionals working with handicapped students in transition from school to work. It is expected that the information from this study will assist in planning, developing, implementing, and evaluating future networking activities. The data/information will essentially contribute to identifying existing networks and suggest needed networking activities. In order to resolve the central problem of the study, four major objectives were developed. These objectives were to:

1. Identify the problems confronting vocational education, special education, rehabilitation, and other related agencies in personnel development programs

2. Identify the networks that have been used or are currently being used by personnel, and determine what types of assistance or services the networks provide
3. Assess the effectiveness of existing vocational education, special education, rehabilitation, and other agencies' networking strategies and resources.
4. Determine the interest of personnel development professionals regarding future involvement in networking strategies and resources.

Research Methods

Instrumentation

A "Networking Needs Survey" was developed to identify problems, needs, resources, and interests related to enhancing personnel development networks and activities for professionals working with handicapped learners in vocational education, special education, rehabilitation, and other related agencies. The instrument development process consisted of two major sources which were used to construct and validate the items: (a) reviews of literature, and (b) a panel of experts. Several drafts of the instrument were reviewed, evaluated, and revised. The final draft instrument was considered to possess a sufficient degree of content and face validity. The instrument contained three (3) principle parts that included directions for completing the survey, demographic information, and the survey items. The variables/demographic information included: (a) present position (vocational teacher, special education teacher, regular educator, local administrator, state administrator, local supervisor/coordinator, state supervisor/coordinator, psychologist, counselor, teacher educator, researcher, vocational evaluator, parent/advocate, other);

(b) years of professional experience (0-2, 3-5, 6-10, 11-15, 16-20, 20+ years); (c) highest degree (high school diploma, associate degree, bachelor's degree, master's degree, advanced certificate or specialist, doctorate degree, other); (d) current residence (50 states, District of Columbia, surrounding territories); (e) minority identification (Asian/Pacific Islander, Black, Hispanic, White, American Indian, other) (optional); (f) current association/organization membership(s); (g) conferences attended; and (h) personal handicapping condition (hearing impairment, visual impairment, physical impairment, other, none) (optional).

The instrument included four major sections. Section 1 asked respondents to indicate the degree of importance of each of ten (10) problem areas in vocational education, special education, rehabilitation, and other related agencies' personnel development programs using a five-point Likert scale based on degree of importance (not important, somewhat important, very important). The problem areas included: (a) needs assessment; (b) inter-agency/organizational collaboration; (c) least restrictive environment/mainstreaming; (d) preservice programming; (e) inservice programming; (f) certification; (g) business/industry sector linkages; (h) transition services from school to work; (i) funding; and (j) program evaluation. Respondents could list and rate up to three additional problem areas. Respondents could also write in specific problems under any of the problem areas they rated.

Section 2 requested respondents to list different kinds of networks or organizations that they have used, or currently use, and to describe the types of assistance or services the networks provided. The kinds of networks/organizations listed on the instrument included: (a) regional resource

center; (b) consortium; (c) instructional materials center; (d) business/industry training program; (e) association/organization information network; (f) computer network; (g) research and development center; (h) personnel preparation training projects; (i) other(s). For any of these networks/organizations, respondents were asked to supply the following information: (a) name, (b) address, (c) scope of network (state, regional, national), and (d) assistance or services provided.

Section 3 asked the respondents to indicate how effective each of eight networking strategies/resources are, or have been in the past, and included: (a) conferences, (b) newsletters, (c) computer linkages, (d) regional resource centers, (e) consortia, (f) hotlines, (g) organizations/associations, and (h) instructional materials centers. The respondents rated the effectiveness of these strategies/procedures on a five-point Likert scale based on "degree of effectiveness" (not effective, somewhat effective, very effective) which also included a "do not know" anchor. The respondents were also permitted to write-in and rate any other additional strategies.

Section 4 requested the respondents to indicate their interest regarding future involvement in each of the eight networking strategies/resources included in Section 3. The respondents rated their interest using a five-point Likert scale based on "degree of interest" (not interested, somewhat interested, very interested). In addition, the respondents were allowed to list and rate any additional strategies.

Population

A survey was conducted with ninety-nine (99) state special needs consultants. Each consultant was asked to identify up to ten (10) state

leadership personnel in their state who were involved in vocational education, special education, rehabilitation, and other related agency personnel development programs at the local, state, regional, or national level. The population of the study, therefore, was the 692 individuals identified by the state consultants. Each of the individuals was selected to participate in the study.

Data Collection

A cover letter, survey instrument, and a stamped, self-addressed return envelope were sent to each participant with the request to return the completed survey instrument within two weeks. The response rate after two weeks was approximately 36%. A follow-up letter, survey, and a self-addressed envelope were sent to each non-respondent three weeks after the initial mailing and the response rate increased to 53%. A second mail follow-up yielded a total of 416 surveys returned and a final response rate of 60%.

Data Analysis

Several analyses were used to answer the research questions and explain the data/information. Internal consistency reliability (Cronbach's Coefficient Alpha) was estimated for the instrument. The internal consistency reliability coefficients for the instrument generally ranged between .80 to .94 for each of sections 1, 3, and 4 within and across all variables. The coefficients indicate that the instrument is a relatively precise measure and is consistently measuring a uniform construct of networking problems, needs, and interests. Means and standard deviations were calculated to describe the data. The Bartlett-Box Test was used to test for homogeneity of variance for each independent variable on sections 1, 3 and 4. Most of the variances were not

significantly different at the $p < .05$ level of significance which justified the use of inferential statistical methods. Analysis of variance (ANOVA) was used to discern significant differences related to the variables in sections 1, 3, and 4. It was not possible to include all 175 ANOVA tables in this article. Therefore, a sample of ANOVA tables is presented in the following results section. The information in secton 2 was not analyzed using inferential statistical methods. However, the information will be presented in the form of a resource directory document.

Results

The findings and conclusions are based on the objectives and research questions generated for this study. The research questions focus on problem areas and issues confronting personnel development programs, effectiveness of networking strategies and resources, and interest of personnel development professionals in future involvement in networking activities. All analyses used the major independent variables listed in the instrumentation section.

Variables (or values) within some of the major independent variables, however, were combined or re-categorized since the cell sizes (n's) were relatively small in several cases. The final set of independent variables and their n's included: (a) Present Position -- vocational teacher (21), special education teacher (23), local administrator (51), state administrator (51), local supervisor/coordinator (43), state supervisor/coordinator (44), teacher educator (85), psychologist, counselor, researcher, vocational evaluator, parent/advocate (27), other (e.g. regular educator, paraprofessional) (70); (b) Years of Professional Experience -- 0-10 years (101), 11-15 years (137), 16-20 years (74), 20+ years (99); (c) Highest Degree -- bachelor's degree

(47), master's degree (172), advanced certificate or specialist (43), doctorate degree (146); (d) Current Residence (AVA regions) -- northeast (107), southeast (40), north central (79), south central (33), west (140), non-U.S. (16); (e) Minority Identification -- white (not Hispanic) (320), minority groups -- (Asian/Pacific Islanders [15], Black [27], Hispanic [11], American Indian [2], and other [5]) (60); (f) Personal Handicapping Condition -- non-handicapping condition (376), handicapping condition (hearing impairment [7], visual impairment [15], physical impairment [16], other impairment [8]) (46). The variables current association/organization membership(s) and conferences attended were not used to make inferences since these variables were confounded for individuals. That is, several persons belong to more than one organization and/or attend more than one conference. The results, therefore, are more easily explained and used more appropriately for descriptive purposes.

The research questions and findings of this study include:

Research Question 1:

Are the problem areas confronting vocational education, special education, and rehabilitation personnel development programs significantly different ($p < .05$) by present position, years of professional experience, highest degree, current residence, minority identification, and personal handicapping condition?

Present Position

There were significant differences among personnel in various positions at the $p < .05$. level of significance for the following problem areas: (a) needs assessment ($F = 1.98$); (b) interagency/organizational collaboration

(F = 2.30); (c) least restrictive environment/mainstreaming (F = 2.59); (d) preservice programming (F = 4.02); (e) inservice programming (F = 2.63); (f) certification (F = 3.98); (g) transition services from school to work (F = 2.86); and (h) program evaluation (F = 1.96). No additional major problem areas were identified by the respondents.

Vocational teachers viewed needs assessment ($\bar{x}$ = 4.10) (see Table 1), least restrictive environment/mainstreaming ($\bar{x}$ = 3.85), and program evaluation ($\bar{x}$ =4.05) as significantly more important problems than did personnel in other positions. Vocational teachers recognize a need to systematically know which knowledge and skills are required for working successfully with handicapped learners in regular programs. Further, accessibility and placement of students in regular vocational classes and barrier-free environments remain critical problem areas. In addition, vocational teachers claim that assessing the effectiveness of the processes and products of their programs is an important problem area in which they need assistance.

Table 1

Analysis of Variance Regarding the Problem Area Importance of Needs Assessment in Vocational Education, Special Education, Rehabilitiation, and Other Related Agency Personnel Development Programs by Present Position

Source	D.F.	S.S.	M.S.	F-Ratio	F-Probability
Between Groups	8	24.3254	3.0407	1.978	*.0481
Within Groups	379	582.5483	1.5371		
Total	387	606.8737			

*$p < .05$.

Psychologists, counselors, researchers, vocational evaluators, and parents/advocates, although a diverse group, believe interagency/organizational collaboration ($\bar{x}$ = 4.24) is significantly more important than did persons in any other position. This may be because while working with or for handicapped learners, they tend to work with diverse agencies and, therefore, readily recognize the importance and problems associated with coordinated service delivery. Specific problems cited included the duplication of services among agencies, lack of communication, lack of formal agreements, "turfdom", and identification and consensus regarding roles and responsibilities among agencies.

Vocational educators ($\bar{x}$ = 4.26) and teacher educators ($\bar{x}$ = 4.00) rated preservice programming significantly more important than did special education teachers ($\bar{x}$ = 3.00) or local supervisors/coordinators ($\bar{x}$ = 3.08). A plausible reason for this finding is that with the increasing prevalence of handicapped learners in regular vocational classes, vocational educators and teacher educators recognize the need for additional knowledge and skills in undergraduate teacher preparation programs. Many vocational/special education teacher educators are at the "cutting edge" in preservice programming and are cognizant of the existing problems/issues. Conversely, special education teachers who have experienced traditional preservice programs (i.e. without any vocational/career education emphasis) may not recognize the importance or need for secondary vocational/career programming. This may also be true for local supervisors/coordinators, but this group may be more concerned with other types of pressing problems, such as funding and similar administrative responsibilities.

Teacher educators viewed inservice programming ($\bar{x}$ = 4.11) and certification ($\bar{x}$ = 3.71) as much more important problem areas than did local administrators ($\bar{x}$ = 3.37) and local supervisors/coordinators ($\bar{x}$ = 3.29). These areas have been a traditional concern for teacher educators, particularly from the perspective of instructional assessment, planning, delivery, and evaluation. Specific problems cited by teacher educators were lack of poor/ineffectual cross-training between vocational education and special education, lack of effective training models, and few vocational/special education certification options.

Further, psychologists, counselors, researchers, vocational evaluators, and parents/advocates ($\bar{x}$ = 4.63) perceived problems associated with transitional services from school-to-work to be significantly more important than did local administrators ($\bar{x}$ = 3.56). Again, this group of individuals may, in part, experience (or attempts at) interagency coordination activities in their service delivery and, therefore, have a particular sensitivity to the coordination/articulation problems related to transition from education to employment than persons in other positions.

Years of Professional Experience, Personal Handicapping Condition

There were no significant differences at the $p < .05$ level of significance for any of the 10 problem areas for: (a) persons having differing years of professional experience, or (b) between persons who possessed a handicapping condition and for those persons who did not possess a handicapping condition. These findings suggest that the problems confronting vocational education, special education, rehabilitation, and other related agencies' personnel development programs are relatively similar for persons regardless of how

much experience they have had in the field, or whether they are handicapped or non-handicapped.

Highest Degree

Significant differences among persons with various degree levels were found for preservice programming ($F = 5.90$), inservice programming ($F = 5.68$), and certification ($F = 4.84$). Persons with doctorate degrees, as might be expected, perceived preservice ($\bar{x} = 3.87$) and inservice ($\bar{x} = 4.07$) programming as significantly more important than did persons with bachelor's, master's, or advanced certificate degrees. This may be anticipated because persons who are responsible for preservice and inservice programs are usually university/college personnel who typically have doctorate degrees. People who have bachelor's degrees, however, tended to view inservice programming problems similar to persons with doctorate degrees. Certification problems and issues were also significantly more important to persons with doctorate degrees ($\bar{x} = 3.48$) than to persons with bachelor's ($\bar{x} = 2.81$) or master's ($\bar{x} = 2.98$) degrees. Again, this finding may be anticipated because certification problems and issues are often closely connected to preservice and inservice problems: Issues of which persons with doctorate degrees are commonly concerned.

Current Residence

Significant differences were found for persons by current residence for interagency/organizational collaboration ($F = 3.48$) (N.C.: $\bar{x} = 3.60$; S.E.: $\bar{x} = 3.68$; S.C.: $\bar{x} = 3.75$; N.E.: $\bar{x} = 3.86$; W.: $\bar{x} = 4.17$; Non-U.S.: $\bar{x} = 4.43$) and transitional services from school to work ($F = 4.30$) (S.C.: $\bar{x} =$

3.63; N.C.: $\bar{x}$ = 3.66; N.E.: $\bar{x}$ = 3.91; S.E.: $\bar{x}$ = 4.17; W.: $\bar{x}$ = 4.31; Non-U.S.: $\bar{x}$ = 4.33). However, the Least Significant Differences (LSD) procedure, (i.e. modified t-test), a liberal follow-up test, did not detect where these differences occurred. This situation may be expected at times and is consistent with Scheffe's Theorem which states that with pair-wise contrasts there can be a guarantee of only some contrasts, but not necessarily those contrasts of interest.

Minority Identification

All minority groups (i.e., Asian/Pacific Islanders, Blacks, Hispanics, American Indians, and others) viewed least restrictive environment/mainstreaming ($F = 3.99$) as an important problem area, and their ratings ($\bar{x}$ = 3.66) were significantly different ($p < .05$) from non-minority persons (whites, non-Hispanics) ($\bar{x}$ = 3.29). Access and equity have been major concerns of minority populations in vocational special education, and the results indicate that these concerns still remain. There were no significant differences for the other nine problem areas.

Research Question 2:

Is the effectiveness of existing vocational education, special education, and rehabilitation networking strategies significantly different ($p < .05$) by present position, years of professional experience, highest degree, current residence, minority identification, and personal handicapping condition?

Present Position

Conferences (F = 2.01) (see Table 2), newsletters (F = 2.16), and computer linkages (F = 2.61) were found to be significantly different regarding their effectiveness among persons in various positions. Vocational teachers ($\bar{x}$ = 4.43) believed conferences were significantly more effective than did persons in all other positions. Psychologists, counselors, researchers, vocational evaluators, and parents/advocates ($\bar{x}$ = 3.79) rated newsletters significantly different from other persons. Further, state supervisors/coordinators ($\bar{x}$ = 3.54) viewed computer linkages as significantly more effective than did special education teachers ($\bar{x}$ = 2.08).

Table 2

Analysis of Variance Regarding the Effectiveness of Conferences in Vocational Education, Special Education, Rehabilitation, and Other Related Agencies' Networking Strategies and Resources by Present Position

Source	D.F.	S.S.	M.S.	F-Ratio	F-Probability
Between Groups	8	13.3516	1.6690	2.011	*.0443
Within Groups	359	297.9527	.8300		
Total	367	311.3043			

*$p < .05$.

Years of Professional Experience, Highest Degree, Current Residence, Minority Identification

There were no significant differences at the $p < .05$ level of significance for any of the 8 networking strategies and resources for (a) persons having

differing years of professional experience, (b) persons with different degree levels, (c) persons in different regions of the United States, and (d) minority or non-minority persons. These findings suggest that the effectiveness of various networking strategies and resources is relatively similar for persons regardless of how much experience they have had in the field, their degree level, where persons reside regionally in the United States, or whether or not persons are members of minority groups.

Personal Handicapping Condition

A significant difference ($p < .05$) regarding the effectiveness of computer linkages ($F = 7.85$) was found between persons with handicapping conditions ($\bar{x} = 2.21$) and those persons without handicapping conditions ($\bar{x} = 2.99$). Persons without handicapping conditions found computer linkages somewhat more effective. None of the other seven strategies and resources were found to have significant differences.

Research Question 3:

Is the interest of personnel development professionals regarding future involvement in networking strategies significantly different ($p < .05$) by present position, years of professional experience, highest degree, current residence, minority identification, and personal handicapping condition?

Present Position

Significant differences were found for persons in various positions for newsletters ($F = 2.15$) (see Table 3), regional resource centers ($F = 2.40$), hotlines ($F = 3.36$), and instructional materials centers ($F = 2.64$). Special

education teachers' ($\bar{x}$ = 4.26) interest in future involvement in newsletters was significantly different from the interest expressed by all other groups.

Table 3

Analysis of Variance Regarding the Interest of Professionals in Future Involvement in Newsletters for Improving Personnel Development Programs by Present Position

Source	D.F.	S.S.	M.S.	F-Ratio	F-Probability
Between Groups	8	18.9914	2.3739	2.151	*.0307
Within Groups	349	385.1231	1.1035		
Total	357	404.1145			

*$p < .05$.

Vocational teachers' ($\bar{x}$ = 4.26) interest in regional resource centers was significantly different from teacher educators ($\bar{x}$ = 3.36). Vocational teachers ($\bar{x}$ = 3.84), special education teachers ($\bar{x}$ = 3.78), and state supervisors/coordinators ($\bar{x}$ = 3.50) were significantly more interested in hotlines than were local administrators ($\bar{x}$ = 2.57). Further, vocational teachers ($\bar{x}$ = 4.65) found instructional materials centers of more interest than did local administrators ($\bar{x}$ = 3.70).

Years of Professional Experience

There was a significant difference among persons with various years of professional experience (F = 4.48) (0-10 years: $\bar{x}$ = 4.16, 11-15 years: $\bar{x}$ = 3.78, 16-20 years: $\bar{x}$ = 3.75, 20+ years: $\bar{x}$ = 4.18) regarding their interest

in future involvement in instructional materials centers. However, the LSD follow-up test procedure did not detect where the differences occurred.

Highest Degree, Personal Handicapping Condition

There were no significant differences at the $p < .05$ level of significance for any of the eight networking strategies and resources for (a) persons with different degree levels, and (b) persons who possessed a handicapping condition, and (c) for those persons who did not possess a handicapping condition. These findings suggest that the interest regarding future involvement in networking strategies and resources are relatively similar for persons regardless of their degree level or whether or not they possess a handicapping condition.

Current Residence

Persons residing outside the United States ($\bar{x} = 4.62$) had a significant difference ($p < .05$) from persons residing in the Southeast ($\bar{x} = 3.56$) or North Central ($\bar{x} = 3.43$) regions in interest regarding future involvement in regional resource centers ($F = 3.00$).

Minority Identification

Minority groups ($\bar{x} = 3.77$) expressed a significantly different ($p < .05$) interest in future involvement in consortia ($F = 4.50$) than did non-minority persons ($\bar{x} = 3.38$).

Summary and Recommendations

The results of this study suggest that several problems exist and confront vocational education, special education, rehabiliation, and other agencies in personnel development programs. Problems and issues related to

needs assessment, least restrictive environment/mainstreaming, and program evaluation were of particular importance to vocational teachers. Minority group persons also cited least restrictive environment/mainstreaming as a significant problem area. Psychologists, counselors, researchers, vocational evaluators, and parents/advocates were especially concerned and apparently affected by problems involving interagency/organizational collaboration and transition services from school to work. In addition, vocational teachers, teacher educators, and persons with doctorate degrees cited a significant concern for preservice programming, inservice programming, and/or certification problems and issues. There were, however, similar concerns regarding the importance of various problem areas by persons having different years of experience in the field, and by persons with or without a handicapping condition.

The findings and conclusions also suggest that there are several effective networking strategies and resources used in the field. Conferences are perceived as a very effective networking strategy for vocational teachers. Psychologists, counselors, researchers, vocational evaluators, and parents/advocates, report that newsletters are most effective. State supervisors/coordinators and persons without handicapping conditions have claimed that computer linkages have been very effective. The perceived effectiveness of networking strategies and procedures, however, are similar in importance for persons with (a) differing years of professional experience, (b) various degree levels, (c) differing residences, and (d) minority or non-minority identification.

The results also indicate that personnel development professionals are interested in future involvement in several networking activities. Special education teachers are particularly interested in newsletters to enhance networking among personnel. Vocational teachers and non-U.S. residents are very interested in participating in regional resource centers and/or instructional materials centers. The use of hotlines to enhance networking among personnel development professionals is desired by vocational teachers, special education teachers, and state supervisors/coordinators. Minority group persons are particularly interested in involvement in consortia activities. The interests are similar, however, for persons with different degree levels and persons with or without handicapping conditions regarding future involvement in various networking strategies and resources.

Based on the findings and conclusions of this study, the following recommendations are made for practice and for future research:

Practice

- Planning for networking activities should reflect differences in problems confronting vocational education, special education, rehabilitation, and other related agencies that work with or for special needs learners. For example, future networking activities could assist vocational teachers in assessing their needs; providing least restrictive learning environments; and assist personnel in evaluating the adequacy, quality, and effect of their programs. Increased networking emphasis should, to a greater extent, include collaboration with personnel, such as, psychologists, counselors, vocational evaluators, and parents/advocates. Further, university/college and other personnel responsible for preservice, inservice, and certification activities need to enhance their networking capabilities to adequately serve prospective teachers and current practicing teachers.

- Conferences, regional resource centers, and/or instructional materials centers should be considered an effective and potential networking activity for vocational teachers in personnel development planning. This is probably true for special education teachers,

paraprofessionals, and other direct service/instruction providers also.

- Newsletters should be used as a resource to enhance networking with support/ancilliary personnel, such as, psychologists, counselors, vocational evaluators, and parents/advocates. Special education teachers are especially interested in this networking resource.

- Computer linkages should be considered as an effective and useful networking strategy/resource for state supervisors. However, once state/national systems (e.g., SpecialNet) are perfected, it needs to be expanded to include universities, local education agencies, resource centers, and others.

- Hotlines are of particular interest to vocational teachers, special education teachers, and state supervisors/coordinators and should be explored as a future networking strategy. Current hotline services should be evaluated to determine their effect on teacher behavior and information use.

- Network planning for minority group concerns should strongly consider consortia activities.

Research

- Future research studies should attempt to include more persons in particular groups to increase sample sizes. While a systematic procedure was used to obtain a representative list of personnel who were involved in personnel development programs in the 50 states, D.C., and surrounding territories, all appropriate persons certainly did not participate.

- An alternative follow-up test should be used to discern where significant differences exist when using the analysis of variance method. Although the Least Significant Differences (i.e., modified t-test) is a liberal technique, it did not detect all significant differences of interest. This situation, however, may be expected in some cases and is consistent with Scheffe's Theorem.

- Future research should examine the individual networking resources and strategies of this study (i.e., conferences, newsletters) for their adequacy, quality, and effect in personnel development programs.

Policy

- State eduation agencies or national professional organizations should take the lead in formulating policy and systems to encourage net-

working across educational fields (e.g. voc education, special education) and levels (teachers, administrators, professors.)

- Policies to inferface with the various extant networking initiatives (ERIC system, regional resource centers, and others) need to be expanded.

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